

## **AMENDMENTS TO THE SPECIFICATION**

**Please delete the second full paragraph on page 8 bridging page 9 in the specification, and replace with the following new one:**

That peak intensity ratio could be an index to cation mixing. High values of the intensity ratio are thought to indicate a developed layer structure and a high crystallinity~~degree of crystal completion~~, while low values of the intensity ratio are thought to show a disordered layer structure caused by cation mixing {Ohzuku et al., *J. Electrochem. Soc.*, vol.140, No.7, pp.1862-1870 (1993)}. In case where X is smaller than 0.03, that peak intensity ratio tends to be low.

**Please delete the first full paragraph on page 17 bridging page 18 in the specification, and replace with the following new one:**

-The operating pH range in the coprecipitation step is preferably 7-10, more preferably 8-9. Values of pH lower than~~not higher than~~ 7 are undesirable because nickel carbonate and manganese carbonate dissolve. On the other hand, pH values higher than~~not lower than~~ 10 are undesirable because nickel hydroxide and manganese hydroxide separate out and this precipitate is susceptible to oxidation and unstable. The operating temperature is preferably kept in the range of 20-100°C, more preferably 40-60°C. In case where the operating temperature is lower than~~not higher than~~ 20°C, the growth of carbonate crystals becomes poor and it is difficult to obtain a carbonate of nickel and manganese which has a homogeneous crystalline phase. In case where the operating temperature is higher than~~not lower than~~ 100°C, the aqueous solution boils, making the coprecipitation operation difficult.

**Please delete the forth full paragraph on page 20 in the specification, and replace with the following new one:**

The ~~lithium-nickel-manganese~~lithium-manganese composite oxide powder of the invention can be advantageously used as the positive active material of a lithium ion secondary battery.

It is preferred that the ~~lithium-nickel-manganese~~lithium-manganese composite oxide produced be suitably disaggregated and classified.

**Please delete the second full paragraph on page 31 in the specification, and replace with the following new one:**

The X-ray powder diffraction pattern was subjected to pattern fitting on the assumption of C12/m1 (No. 12) of the monoclinic/~~rhombic~~ system according to the WPPD method developed by Toraya et al. (H. Toraya et al., *J. Appl. Cryst.*, 19, 440(1986)). As a result, the a-axis length, b-axis length, and c-axis length were found to be 4.993 angstroms, 8.600, and 5.044 angstroms, respectively, and  $\alpha = \gamma = 90.00^\circ$  and  $\beta = 109.41 \pm 10.94^\circ$ . The BET specific surface area was  $1.8 \text{ m}^2 \text{ g}^{-1}$ .

**Please delete the third full paragraph on page 32 bridging page 33 in the specification, and replace with the following new one:**

In the X-ray powder diffractometry using a Cu-K $\alpha$  ray, the peak intensity ratio  $I_{(002)}/I_{(13-3)}$  between the (002) plane and the (13-3) plane in terms of Miller indexes  $hkl$  on the assumption of belonging to C12/m1 (No. 12) of the monoclinic/~~rhombic~~ system was 1.78.

**Please delete the first full paragraph on page 33 in the specification, and replace with the following new one:**

The X-ray powder diffraction pattern was subjected to pattern fitting on the assumption of C12/m1 (No. 12) of the monoclinic/~~rhombic~~ system according to the WPPD method developed by Toraya et al. (H. Toraya et al., *J. Appl. Cryst.*, 19, 440(1986)). As a result, the a-axis length, b-axis length, and c-axis length were found to be 4.987 angstroms, 8.602, and 5.031 angstroms, respectively, and  $\alpha = \gamma = 90.00^\circ$  and  $\beta = 109.41 \pm 10.94^\circ$ . The BET specific surface area was  $1.6 \text{ m}^2 \text{ g}^{-1}$ .

**Please delete the first full paragraph on page 34 in the specification, and replace with the following new one:**

In the X-ray powder diffractometry using a Cu-K $\alpha$  ray, the peak intensity ratio  $I_{(002)}/I_{(13-3)}$  between the (002) plane and the (13-3) plane in terms of Miller indexes *hkl* on the assumption of belonging to C12/m1 (No. 12) of the monoclinic/~~rhombic~~ system was 1.93.

**Please delete the second full paragraph on page 34 in the specification, and replace with the following new one:**

The X-ray powder diffraction pattern was subjected to pattern fitting on the assumption of C12/m1 (No. 12) of the monoclinic/~~rhombic~~ system according to the WPPD method developed by Toraya et al. (H. Toraya et al., *J. Appl. Cryst.*, 19, 440(1986)). As a result, the a-axis length, b-axis length, and c-axis length were found to be 4.980 angstroms, 8.593, and 5.025 angstroms, respectively, and  $\alpha = \gamma = 90.00^\circ$  and  $\beta = 109.41 \pm 10.94^\circ$ . The BET specific surface area was  $1.1 \text{ m}^2 \text{ g}^{-1}$ .

**Please delete the second full paragraph on page 35 in the specification, and replace with the following new one:**

The nickel-manganese oxide of the ilmenite structure and lithium hydroxide monohydrate were mixed together by means of an automatic mortar for 1 hour in such a proportion as to result in an Li/(Ni+Mn) atomic ratio of 1.36. The mixture obtained was burned at 1,000°C in an air stream for 20 hours to obtain a lithium-nickel-manganese~~lithium-sodium-nickel-manganese~~ composite oxide. As a result of ICP analysis for composition, this composite oxide was found to have the composition  $\text{Li}[\text{Ni}_{0.45}\text{Mn}_{0.45}\text{Li}_{0.10}]\text{O}_2$  ( $X=0.10$ ). The composite oxide gave the X-ray diffraction pattern shown in Fig. 1, indicating that the oxide had a layered rock salt structure of the  $\alpha$ - $\text{NaFeO}_2$  type.

**Please delete the first full paragraph on page 36 in the specification, and replace with the following new one:**

In the X-ray powder diffractometry using a  $\text{Cu-K}\alpha$  ray, the peak intensity ratio  $I_{(002)}/I_{(13-3)}$  between the (002) plane and the (13-3) plane in terms of Miller indexes  $hkl$  on the assumption of belonging to C12/m1 (No. 12) of the monoclinic/~~rhombe~~ system was 1.61.

**Please delete the second full paragraph on page 36 in the specification, and replace with the following new one:**

The X-ray powder diffraction pattern was subjected to pattern fitting on the assumption of C12/m1 (No. 12) of the monoclinic/~~rhombe~~ system according to the WPPD method developed by Toraya et al. (H. Toraya et al., *J. Appl. Cryst.*, 19, 440(1986)). As a result, the a-axis length, b-axis length, and c-axis length were found to be 4.894 angstroms, 8.592, and 5.027 angstroms,

respectively, and  $\alpha = \gamma = 90.00^\circ$  and  $\beta = 109.41 \pm 10.94^\circ$ . The BET specific surface area was  $0.5 \text{ m}^2 \text{ g}^{-1}$ .

**Please delete the second full paragraph on page 37 in the specification, and replace with the following new one:**

In the X-ray powder diffractometry using a  $\text{Cu-K}_\alpha$  ray, the peak intensity ratio  $I_{(002)}/I_{(13-3)}$  between the (002) plane and the (13-3) plane in terms of Miller indexes  $hkl$  on the assumption of belonging to C12/m1 (No. 12) of the monoclinic/~~rhombic~~ system was 1.61.

**Please delete the third full paragraph on page 37 bridging page 38 in the specification, and replace with the following new one:**

The X-ray powder diffraction pattern was subjected to pattern fitting on the assumption of C12/m1 (No. 12) of the monoclinic/~~rhombic~~ system according to the WPPD method developed by Toraya et al. (H. Toraya et al., *J. Appl. Cryst.*, 19, 440(1986)). As a result, the a-axis length, b-axis length, and c-axis length were found to be 4.990 angstroms, 8.600, and 5.041 angstroms, respectively, and  $\alpha = \gamma = 90.00^\circ$  and  $\beta = 109.41 \pm 10.94^\circ$ . The BET specific surface area was  $2.0 \text{ m}^2 \text{ g}^{-1}$ .